Amendments to the Claims

1. (currently amended) An optical performance monitor for measuring the performance of optical networks, comprising:
a demultiplexer for demultiplexing an input beam into a plurality of wavelength channels ~~wavelengths~~;
an array of divided output waveguides, each divided output waveguide positioned to receive a corresponding demultiplexed wavelength channel from said demultiplexer, and each divided output waveguide laterally separating said corresponding demultiplexed wavelength into a first portion and a second portion; and
a detector array having sensor elements positioned to receive said respective first and second portions of said demultiplexed wavelength channels ~~wavelengths~~.

2. (original) An optical performance monitor as claimed in claim 1, wherein said demultiplexer is an echelle grating.

3. (currently amended) The ~~An~~ optical performance monitor as claimed in claim 1 [[2]], further comprising an undivided output waveguide between adjacent pairs of divided output waveguides, said undivided output waveguides being positioned so as to receive background noise signals having wavelengths between said demultiplexed wavelength channels ~~wavelengths~~.

4. (currently amended) The ~~An~~ optical performance monitor as claimed in claim 2 [[3]], wherein said echelle grating is a Rowland grating, said demultiplexed wavelength channels ~~wavelengths~~ being focused onto said divided output waveguides.

5. (original) An optical performance monitor as claimed in claim 4, wherein said echelle grating is a blazed grating.

6. (original) An optical performance monitor as claimed in claim 4, wherein said detector array is an InGaAs array.

7. (original) An optical performance monitor as claimed in claim 1, wherein said output

waveguides are ridge waveguides and are coupled to said echelle grating by a slab waveguide.

8. (original) An optical performance monitor as claimed in claim 7, further comprising a thermoelectric cooler and temperature sensor to maintain the temperature of said monitor at a nominal value.

9. (original) An optical performance monitor as claimed in claim 1, wherein said divided output waveguides are positioned such that when light having a nominal channel wavelength is directed onto said divided output waveguides, said light is divided substantially equally into said first and second portions.

10. (original) A method of monitoring the performance of an optical network, comprising the steps of:
demultiplexing an input beam into a plurality of wavelengths;
receiving said demultiplexed wavelengths in divided output waveguides, said output waveguides separating said demultiplexed wavelengths into laterally spaced portions; and
detecting the relative intensity of said laterally spaced portions to determine the drift of said demultiplexed wavelengths from nominal values.

11. (original) A method as claimed in claim 10, wherein said plurality of wavelengths are demultiplexed with an echelle grating.

12. (currently amended) The ~~A~~ method as claimed in claim 10 [[11]], wherein said demultiplexed wavelength channels ~~wavelengths~~ are directed onto a mid-point of said divided output waveguides so that the intensity of said laterally spaced portions is substantially the same.

13. (currently amended) The ~~A~~ method as claimed in claim 10 [[1]], wherein said input beam is demultiplexed with a Rowland echelle grating, which focuses said demultiplexed wavelength channels ~~wavelengths~~ onto said divided output waveguides.

14. (currently amended) A method as claimed in claim 10 [[11]], further comprising detecting background radiation at wavelengths corresponding to positions between said divided output

waveguides, and comparing the intensity of radiation received by said divided output waveguides with background radiation to determine a signal-to-noise ratio for said demultiplexed wavelength channels ~~wavelengths~~.

15. (original) A method as claimed in claim 11, wherein said laterally spaced portions are detected with an InGaAs detector.

16. (currently amended) An optical channel monitor comprising
an echelle grating for receiving a beam of incoming light and demultiplexing said incoming light into a plurality of wavelength channels ~~wavelengths~~;
an array of output waveguides, each output waveguide positioned to received a corresponding demultiplexed wavelength channel from said echelle grating; and
a detector array having sensor elements positioned to receive said respective demultiplexed wavelength channels ~~wavelengths~~.

17. (currently amended) An optical performance monitor for measuring the performance of optical networks, comprising:
a planar waveguide echelle grating for demultiplexing an input beam into a plurality of wavelength channels ~~wavelengths~~;
an array of divided output waveguides, each divided output waveguide positioned to receive a corresponding demultiplexed wavelength channel from said demultiplexer, and each divided output waveguide laterally separating said corresponding demultiplexed wavelength channel into a first portion and a second portion;
a slab waveguide coupling said output waveguides to said planar echelle grating; and
a detector array having sensor elements positioned to receive said respective first and second portions of said demultiplexed wavelength channels ~~wavelengths~~.

18. (new) The optical performance monitor as claimed in claim 3, further comprising:
additional detectors for measuring the background noise signals; and

monitoring means for determining an optical signal-to-noise ratio of the wavelength channels by comparing measurements from the detector array and the additional detectors.

19. (new) The optical performance monitor as claimed in claim 1, further comprising monitoring means for measuring drift for each wavelength channel by comparing measurements of the first and second portions for each wavelength channel from the array of detectors with predetermined nominal measurements.